

# NATIONAL SNAPSHOT



[ image : woodchipmedia ]

**Current Use of POV Technologies**

2010 Australian Educational Context

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*“... It poses as an inevitable “happening”...that is, POV in education and training is both shocking and unbelievable to consider however, it is going to happen, it is now possible and it is constructively usable.”*

Michael Coghlan – 12<sup>th</sup> October 2010



**MOBILIZETHIS2010**  
**5 YEARS STRONG**

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## FOREWORD

According to Associate Professor Katina Michael, Faculty of Informatics, University of Wollongong on 10<sup>th</sup> October 2010 the use of point-of-view video technologies or POV is considered to be an element or practice of *sousveillance*, as part of the greater Ueberveillance.

Steve Mann, tenured Professor at the Department of Electrical and Computer Engineering at the University of Toronto coined this term according to Wikipedia entries (2010) broadly describing the recording of an activity from the perspective of a participant in the activity.

The etymology of this notion can be attributed as follows:

“...The term "sousveillance" stems from the contrasting French words *sur*, meaning "above", and *sous*, meaning "below", i.e. "surveillance" denotes the "eye-in-the-sky" watching from above, whereas "sousveillance" denotes bringing the camera or other means of observation down to human level, either physically (mounting cameras on people rather than on buildings), or hierarchically (ordinary people doing the watching, rather than higher authorities or architectures doing the watching).

*Wikipedia - accessed 8<sup>th</sup> October 2010*

The Australian Flexible Learning Framework (2010) can take credit for providing seed funding to enable many of these project-oriented explorations of these technologies over the last two years in an Australian vocational education and training context.

It is now evident that technology assisted first person documentation has grown in Australia and New Zealand from a novel concept or idea into a seriously considered genre of user generated rich media in it's own right. This coming of age was evidenced by cross-sector participation at the AUPOV09 Symposium held in Wollongong, NSW Australia, and 'birth' to further research of where POV is being used in an educational context.

This paper is a compilation of accounts of the use of point-of-view video technologies by Educators from differing educational sectors in Australia. These case studies are presented in the applied Connectivist context, the current project or situational status all informing a contemporary position of these technologies in education and training for learners, teachers and organisations alike.

They are by no means conclusive and in completing this paper the Author acknowledges that this is only a small assay of the use of point-of-view technologies in an Australian education and training context. This paper also seeks to present and invite feedback in one of the few recorded assays of this educational orientation of wearable Point of View (POV) technology, at a time when the technologies themselves are only just becoming emergent with GPS or location enabled features in the Australasian marketplace.

Subsequent interrogations of implication that location enabled enhancement may have for educators in the not too distant future will be further articulated in the Author's own body of research as part of the Faculty of Informatics, University of Wollongong, NSW Australia.

The Author wishes to acknowledge and thank the Contributors to this publication for the time they have invested in agreeing to be interviewed and for the commitment each has shown in contributing with due reflection on current educational practices using this technology in their respective organisations.

At the point of draft publication the following Australian & New Zealand based organisations engage in the area of using point-of-view technologies and / or associated personal video portfolio platforms:

- Australian Federal Police
- West Australian Police
- Northern Territory Police Fire Emergency Services
- Queensland Combined Emergency Services
- School of Ambulance and Paramedic Services
- Defence Department Australia – Air Force, Navy
- Down Under Security Solutions
- JSB Equipment Pty Ltd
- RemStone Therapy
- Cobb and Co. Equestrian
- CEMONS
- University of Newcastle
- Queensland University of Technology
- University of Wollongong
- Australian Catholic Universities
- RMIT University Victoria
- University of Otago
- Charles Darwin University
- University of Victoria
- Matamata College
- Air Services Australia
- ETSA Utilities
- Directions Australia
- Skills DMC
- School of Manufacturing Services
- ACE Port Macquarie Community College
- Fregon Anangu School
- Online Fitness Pty Ltd
- Australian Red Cross Blood Service
- Boral Plasterboard
- The Australian Flexible Learning Framework
- Family Planning NSW

The Author also acknowledges the extensive networks of educators who employ point-of-view technologies across a wide array of institutes and affiliate industry including:

- ACT Training
- Canberra Institute of Technology
- TAFE NSW
- TAFE SA
- TAFE QLD
- TAFE WA
- TAFE VIC
- TAFE TAS

## **Title**

National Snapshot | Current Use of POV Technologies in an Australian Educational Context

## **Abstract**

Developers of POV or point-of-view technologies are often conversant with a multitude of differing industry representatives including law enforcement, extreme sports, community policing, medical and more recently the Education sector.

Amidst the cries of civil libertarians, these technologies are fast making their ways into the hands of the seemingly innocuous Educator, re-purposed for first-person rich media creation, for method making recounts that can be transmitted, spread and interpreted in a manner to best befit competency based “forensic” assessment.

The rapid uptake of body worn, location enabled mobile network accessible solutions for rich media creation and connection in extreme sports, military and medical sectors is now also challenging the mobile learning / distance education stereotype. The re-purposed application of these technologies in the education and training sector is now opening up new domains for connecting learners with educators, which in turn poses substantial challenges for organisations as they grapple with the implications that this technology undeniably imbues.

This paper presents fifteen (15) case studies which have emanated since the inaugural AUPOV Conference held in Wollongong NSW Australia in 2009, presenting a current state-of-art picture of the use of these technologies in the vocational training and tertiary sectors.

## **Introduction**

The concept of first-person documentation in an Australian educational context is a relatively recent applied practice for rich media creation.

The purpose of this paper is to provide a snapshot of Educators employing these technologies in an Australian context with attitudes, purpose, intent and reservations in their respective case study inclusion. Nomenclature that defines this POV technology often provides the contextual referencing to differentiate users intent, industry type or indeed the niche' social use of such technology. Likewise certain POV technologies are often associated with an area that best befits the customisation of the technology ie. VIO products for the military

The notion of wearable differs from person to person and from site to context, so, this paper seeks to interrogate what has constituted as of importance to the learner, to that of the educator, the context in which POV is being applied, the inference for organisations and the emergent privacy and security risks inherent with distributive or aggregation of these creations.

It is important to note that this paper presents POV as a complimentary technology to existing multimedia creation. This paper provides examples of inclusive media creation practices where asset-to-wearable transitions of media creation most especially in a learner oriented assessment evidence gathering context flourish and threaten to derail the existing models of assessment and recognised prior learning.

## **CASE STUDIES**

Stephan Ridgway  
TAFE NSW - Sydney Institute, Ultimo Campus, NSW Australia

Georgina Nou  
APY Lands TAFE SA, Adelaide South Australia

Brian Mobbs  
TAFE NSW - Sydney Institute, Ultimo Campus, NSW Australia

Paula Williams  
Australian Catholic University, NSW Australia

Ursula White  
Northern Territory Fire Police & Emergency Services, Northern Territory Australia

Richard Ross  
TAFE NSW, Western Institute, NSW Australia

Ian Squire  
TAFE NSW, Illawarra Institute, NSW Australia

Simon Brown  
SkillsTech Australia, Brisbane, Australia

Geoff Lubich  
Pilbara College of TAFE, Perth, Western Australia

Aaron Pont, Steve McMahon, Marg O'Connell  
Canberra Institute of Technology, Australian Capital Territory, Australia

Susan Brunner  
TAFE SA, Adelaide, South Australia

Guy Truss  
South Western Institute, Bunbury, Western Australia

Rory O'Brien  
TAFE NSW, Centre of Learning Innovation, Sydney Australia

Michael Coghlan  
TAFE SA, Adelaide, South Australia

Samantha Colliton  
RemStone Therapy, Orange, NSW Australia



**Stephan Ridgway**  
**Manager Learning and Innovation, Workforce Development Unit**  
**TAFE NSW - Sydney Institute**  
**Workforce Development Unit**  
**Sydney Australia**

The role of the Workforce Development Unit within TAFE NSW - Sydney Institute is to foster the embedding of innovative flexible teaching and learning practices across the organisation.

*“...The unit first saw the potential of point of view cameras (POV) in the VET sector in 2008 with the initial purchase of 4 POV cameras to trial in targeted curriculum areas. Since then a range of different types of POV equipment has been purchased to suit a variety of teaching contexts”.*

POV cameras have been identified as an emergent technology with potential to support flexible delivery for range of reasons that include:

- The practical focus of training delivered within vocational education sector, especially in the trade's areas where recording short instructional videos can be a useful teaching resource
- The proliferation of a wide variety of low cost, flash memory based, small form factor body wearable video recorders
- The emergence of a wide range of free cloud based video sharing services such as YouTube, Blip, Vimeo etc. which facilitate the encoding, storage and delivery of video
- The increasing need for work distributed workplace based learning
- Student recorded video that can provide “valid” source material for assessment and evidence in a skills recognition process
- POV complements the use of e-portfolios to record evidence
- The ability to capture evidence using non-text based modes means greater relevancy to the competency in question
- Forms part of a portfolio of competence and achievement that can be used across a learners learning and study pathway
- Provides time savings and avoidance of replication of instruction
- Allows for assessment personalised and tailored to student needs
- Streamlines the RPL process and centralises the source of evidence for students and Assessors
- Will yield exemplars of good evidence
- Ensures validity of evidence, video and audio
- Is a convenient form to the employer allowing on the job assessment
- Permits Assessor to not be in the workplace enabling less intrusive observations

Currently point-of-view technologies according to Ridgway are being trialled in Sydney Institute, TAFE NSW Australia in a limited way in the following areas:

- Teachers recording short instructional video material to support their teaching and learning programs primarily in Refrigeration, Allied Health Sciences, Hair Dressing and Floristry  
Hairdressing students recording video based evidence using POV cameras then uploaded to the Mahara e-portfolio platform as part of a skills recognition process trailed as part of a nationally funded Australia Flexible Learning Framework 2009 e-portfolio implementation trial - currently the students demonstrate their work with clients to the trainer/assessor, which often takes place on a Sunday, once every 6-8 weeks and takes anywhere between 3-6 hours.
- Limited trials of live work based assessment using POV and 3G mobile data connectivity within the Adobe Connect Pro environment with a view for continued use into 2011

Ridgway considers the application of these technologies in his organisation to be at a foundational level, in an introductory project oriented status with the predominant age of the user groups to be between 18 years and 24 years of age.

The main challenges facing TAFE NSW Sydney Institute according to Ridgway organisation in the applied use of these technologies is the support needed to get teachers trained and supported on the ground, storing the created video files and gaining the trust of teachers accessing a Learning Technology Mentor program.

*“...While the advent and proliferation of video sharing services has made capturing, encoding, storing and sharing video easier there are still barriers to entry for educators with little or no experience in video production.”*

Ridgway reports that storage of video internally within the organisation still poses ICT challenges as POV videos often exceed the size limits allocated for users in a variety of applications and learning management platforms.

TAFE NSW is currently transitioning to a centrally house resources in the Equella LCMS which will mean greater file size allocations for Teachers only.

**Guy Truss**  
**e-Learning Co-ordinator**  
**South Western Institute**  
**Bunbury, Western Australia**

The South West Institute of Technology (formerly South West Regional College of TAFE) first engaged with POV technologies in 2008 after accessing (and hosting) a demonstration for a teacher professional development workshop.

Guy Truss was involved in some early inception e-learning projects using this technology and considers POV cameras as a great tool for educators to use.

*“....We could see the potential straight away for all forms of assessment using POV Cameras. This was because for the first time the Assessor/Trainer was able to view the assessment task as the student does. A good example of this is when the learner is conducting the work being assessed in a confined space e.g. under a car. An Assessor would need to be outside and removed from the task even if he or she is right there POV cameras show you what the student is looking at and doing it from the student’s point of view.”*

Truss makes an observation that for the educator, point-of-view means;

*“...watching in order to train or assess from the students perspective.”*

The South West Institute of Technology are using POV assessments for both institutional and external students. In the Trade areas with student / teacher ratios often exceeding 12:1, it is not always possible to be present when a student reaches a critical point of assessment and needs the assessor or educator to observe what the Student or Learner is doing.

In these cases, the South West Institute of Technology are permitting students to wear the POV cameras and record what they are doing along with an oral accompaniment of why they are doing it. Using this method, Teachers are able to allow students to work at their own pace, and ensure that they are able to assess the key areas of their training.

Another way The South West Institute of Technology are using POV cameras is in the collection of Recognition of Prior Learning (RPL) evidence.

After interviewing RPL candidates the Teacher is able to identify the type of work they are doing that can be used as evidence for the units they are applying for. The Teacher then encourages students to borrow a set of POV camera glasses to take to their workplace and record themselves completing the task/s assigned.

This method provides the Teacher with an ability to catch the activity when it happens and not need to be there in person. Guy Truss recounts an instance where he was able to view a RPL candidate perform several complex tasks carried out on the job over the period of a month in a few hours to make a valid and fair judgment on competence.

This same candidate was working around 60 kilometres from the main delivery campus and the same level of face to face assessment would have required three or four 120 kilometre round trips and a good deal of time waiting for a task that was assessable.

*“...We were also able to offer POV assessment to a Phlebotomy student who had relocated to Karratha with her family before the final practical assessments were complete. The student was able to borrow the POV Cameras through an inter-library loan and send the captured video to her Lecturer for assessment. Without POV assessment it would have been very difficult for this student to finish her training.”*

Truss states that there has been great success also in the use of POV cameras for Indigenous students undertaking the Aboriginal Education Support Certificate, which is offered by the South West Institute of Technology.

*“...We used the cameras to video the students leading meetings and this was an invaluable tool as the students didn’t feel like they were being filmed and were not as self conscious as they are in front of a traditional camera.”*

Guy reports that Teachers at the South West Institute of Technology are very excited about further developments with POV and are looking forward to combining this development with platforms like live streaming and mobile technologies that will help reach a much greater number of their students in regional and remote regions of Australia.

**Rory O'Brien**  
**Capability Development for TAFE Services**  
**Centre for Learning Innovation, TAFE NSW**  
**Sydney Australia**

The Centre for Learning Innovation, TAFE NSW runs weekly e-learning capability development sessions for TAFE NSW Teachers and Staff called *CLI Connects*.

Delivered via web conferencing, topics cover a broad spectrum of e-learning technologies and skills from the use of software, creating video and audio, to finding and creating resources for training. In this context the use of POV video usage fits into creating resources, getting students to create their own resources and possibly for the validation of assessment.

In reviewing the use of POV across TAFE NSW, Rory O'Brien notes four major and recent trends that have emerged in the last year or so:

1. The technology for POV has matured to a point where it is small, light, robust and importantly cheap enough for widespread application
2. As the equipment becomes more accessible, it has found its way into a variety of training situations from hairdressing to manufacturing to air-conditioning installation and is also becoming commonplace in law enforcement and security industries
3. Access to cheap and simple-to-use equipment provides greater potential for making equipment available for students to record their own actions to satisfy competency requirements, with great potential for streamlining assessment for skills-based subjects.
4. A key requirement for effective POV use is the underpinning skills of video editing and the ability to use video sharing services such as YouTube. An effective strategy is to teach the practice of creating many short topic-based videos, rather than long compilations and also to emphasise the need to get it "right" in the camera, rather than relying on editing later.

Rory reports:

*"...Currently there are a handful of TAFE Teachers using POV cameras effectively for skills demonstrations and for assessment. This is set to increase as the equipment is more widely available and through the impetus and example shown by Teachers such as Brian Mobbs, Refrigeration Teacher at SIT Campus Sydney Institute, TAFE NSW."*

Rory also points to a very useful resource, which he considers as seminal in where the Australian Flexible Learning Framework identifies POV cameras as a possible source of student portfolio material for assessment - <http://bit.ly/1rGfBX> (see References)

Issues and challenges according to Rory posing for TAFE NSW in the uptake of point-of-view video technologies are as follows:

- Building teacher capability in a number of technologies at once – including video shooting and editing and the use of video hosting services.
- The adoption of e-portfolios as assessment tools still has some way to go...while e-portfolios can be a great way for students to demonstrate competency through video, photos etc. these require students to have technical skills that may not relate to the area of study.

**Geoff Lubich**  
**Automotive Mechanics Lecturer**  
**Pilbara College of TAFE**  
**Karratha Campus**  
**TAFEWA, Western Australia**

In 2004, the Author of this paper attended the Western Australian Department of Education Flexible Learning & Network Learning Conference held at the Pilbara College of TAFE, Karratha Campus in Western Australia.

As a part of those proceedings Geoff Lubich spoke of engaging with his students using POV technologies in the manner of his training and assessment of skills learned in a workplace setting.

Discussion with Geoff revealed that he was employing the active use of wearable recording point-of-view units to capture short, instructional or assessment oriented video resources created by students in the workplace later made available to other students or teachers as teaching resources.

Geoff provided the following as a reason for using point-of-view technologies further more with his Students:

*“...an opportunity for students to engage with learning experiences in a hands-on experiential manner where I encouraged students to repeat or to interpret those class based experiences wearing a set of glasses with camera, all attached to a small hip worn digital video recorder unit.”*

The Author was struck with the ingenuity of the idea employed, the engaged and real accounts of student's appreciation of the process and the genuine manner of readiness in which students irrespective of their ability were inclined to wear and record their own hands on activities.

Lengthy discussions followed interstate and over the following year a number of other innovative VET educators surfaced, influenced by Geoff Lubich and his passion to paint a picture of student generated teaching resources. This included an Educator who was working with Challenger TAFE Western Australia in the Aquaculture field, Sue Waters.

*“...The use of point-of-view technologies provided affordability and accessibility for student use, paramount in the adoption picture where assessment and recognised prior learning were possible using the technology”.*

The context of use for the POV technologies by Geoff Lubich was primarily in the automotive and mechanical fitting trades to enable the presentation of video based performance data by the students to their assessment processes.

The generated video was used in some cases to create small short, targeted video training aids on selected elements of skills.

In addition to this innovative use of hand-built POV technologies Geoff also applied the learning digital content a step further by incorporating an element of playback mobile learning via the MP4 player functionality of the DVR players.

Geoff recounts:

*“...An agreement was reached with CDX Global [ref.] to allow their video training clips in the Automotive area to be converted for use on mobile display devices for student use in their workplace. This media was used to support a mobile mixed mode learning format where the students completed workbooks in the workplace.”*

During the period between 2005 and 2006, seven automotive workplaces were issued with cameras and media devices for student use in those workplaces. A video based assessment matrix was devised and employed for two of the main subject areas - braking systems and cooling systems.

Students were asked to record video when undertaking the following tasks in braking systems:

- Disc removal and replacement, which in some cases included front bearing overhaul.
- Disc calliper removal
- Disc pad replacement.
- Disc cleaning.
- Brake bleeding
- Cooling system service, checking hoses, belts, fans etc
- Radiator replacement
- Coolant replacement

Geoff recalls students being instructed to collect evidence in the workplace of their skills in two differing formats:

*“...Video collected as undirected, where the students were expected to wear the cameras for extended periods to capture much video that could be used later in the assessment process for accelerated assessment or RPL and, directed, where students only recorded very specific short segments whilst performing an element of the total task.”*

Apparently, field studies and anecdotal recounts revealed that not all students found the new methodologies easy to adopt with approximately 50% of the students able to fully integrate the use of the point-of-view wearable systems into their daily activities.

Two older or more mature students started to use the cameras in an ad-hoc record of extended activities without direction. 100% of the students were able to capture some useful video that could be used to support competency.



A second group of students from multiple trade areas undertook a project using media technologies as part of the learning and assessment process in a more intensive format, interrogating the process of creation more thoroughly. This second group of students proved to have excellent computer skills and were more competent users of camera glasses, video editing software and the use of Microsoft Powerpoint applications to present their final works.

These students were required to record POV video of a task performance in their respective trade area and then using that video, create a power-point presentation of that task or skill to support the format or storyboard of the video, and then present the finished product to the class as a more comprehensive component of their overall learning assessment.

The outcomes for this project that spanned almost three years as part of core learning and teaching delivery was summarised by Geoff:

*"...All students in my classes were able to grasp the concept of POV technologies for delivery and assessment although not all of course were enamoured with it's potential when it came to assessment time. Some students had some difficulty in managing the head cameras to catch the task, most improved with practice. All students were able to manage the technology from an operation perspective, to keep track of the SD cards contained, able to understand instructional content in a virtual context and all students acknowledged the value of having ready to play examples of their own work in their own hands."*

It is interesting to note in conversations with Geoff that he considered that much of the video generated had no value other than to demonstrate the student's skill, due to lighting issues, head movement etc.

On a more positive note, Geoff related that a significant amount of the video could be edited to create cheap, accurate, copyright free and relevant, short instructional training videos which Geoff in fact employed in future sessions with his students.

Some anecdotal accounts from students included reference to:

*"...That a student noted that the only time he wore safety glasses was when he was recording.....another claimed that after a few minutes he tended to forget that he was wearing a camera.....two students in the second group found the process they undertook to be personally challenging and rewarding beyond that of simply completing assessment tasks."*

A significant finding in this Case Study related to that of employers. All employers engaged within the context of these trials although sceptical to begin with, on a change in basis for understanding skill development were then willing to engage with the technology on a personal level when demonstrated by Geoff. Each employer also noted the potential for emerging technologies such as point-of-view video technologies to have a significant impact on the future of workplace training and assessment.

**Georgina Nou**  
**Consultant**  
**APY Lands TAFE SA Regional**  
**South Australia**

Georgina Nou has been championing the use of POV technologies since 2008 when she was given some POV glasses in order to trial possible applications. With POV examples from a range of Vocational Education and general education areas, and some reflections on their use, she attended the inaugural AUPOV event in Wollongong, Australia in 2009.

Georgina is an ICT specialist Consultant and Educator who has significant experience working with Australian Indigenous communities in the APY Lands of South Australia as well as Central and Northern Australia.

With funding awarded through a number of Innovations grants funded by the Australian Flexible Learning Framework, Georgina has applied the use of POV technologies and other media based learning to the delivery of training and learner assessment in the APY Lands through TAFE SA trade and health sector courses.

*“....The heavy machinery operation and construction Lecturers have demonstrated this technology to both students and remote Lecturers in the engineering, construction and mining areas. They have made demonstrations of skills like mixing concrete, inspecting bobcats and then have had students use the wearable POV glasses to record evidence of their competency in various skills.”*

Likewise Georgina reports that POV cameras are being used in the educational context of the Community Service sector, with aged care trainees and clients.

In this context the Lecturer has captured footage of daily routine tasks like making beds and issuing medicine for people in remote Australian communities. The resources collected in digital format using POV technologies are then easily made available for future training and for online sessions.

*“....The micro-capture camera has enabled us to get a closeup image of body examinations with a view to exploring filed diagnosis with the health provider, Nganampa Health. Talks have begun with other service providers in the Lands as to the use of POV cameras for house and worksite inspections.”*

During the course of this year's work in 2010 there have been several enquiries from the TAFE SA library sector in terms of how this technology can enhance course delivery and assessment (see Susan Brunner Case Study).

The core group of learners that Georgina has been working with have been Australian Indigenous people in remote communities and the Staff who work in many differing support roles with these community members. Communities are mainly in the South Australian APY Lands however a number of these communities also have been in the Northern Territory.

Georgina reflects on the use of these technologies and in summation states that point-of-view glasses are a very accessible and easy way of capturing video in the context of “outbush”. A significant observation in this process is that the footage captured was often then be viewed in a workshop and viewed appreciatively by friends and family of the learner.

As an overall summation, Georgina reports that this process of technology associated learning has proved very engaging. When re-viewing the student's video it was apparent to Nou that it is considered as a great tool for self-evaluation, allowing comments on how the task performance could be improved.

Nou reports The ease of use has lead to POV glasses being passed around to a range of community members, both Anangu and non-Anangu who has often followed up with a purchase of the POV camera glasses for themselves.

Georgina's project participants have taken footage in various contexts beyond training and assessment, for instance, at the local Art Centre, with artists at work and talking about their painting and associated Dreaming. Georgina believes this could be extended to filming and interviewing at the actual site of the Dreaming.

Additional potential use emerged with one of the Land Management students taking some footage of the local surrounds where she was researching flora and fauna conservation. The advantage perceived was that video capture with POV could unobtrusively capture tracks/signs of a species' presence.

Georgina's project team also trialled a point-of-view camera technology that is head worn with a bullet camera and digital video recorder / player.

Reports of hardware failures lead to frustrations being voiced mainly because the audio track recorded with interference. Observations of employing technologies with Indigenous Australians were cognisant of an ability to adopt these new technologies, however the primary feedback centred on the ease of the camera functioning to be straightforward for use.

*“...Lecturers are creating raw footage and then editing short demonstrations for use in courses. These are being linked to our APY TAFESA Moodle site.”*

In addition to the use of a learning management system as a repository for these wearable technology creations, Georgina has also reported an interest in e-portfolios for learners in rural and remote locations.

This facility has been extended to include a video portfolio repository / player known as *Streamfolio* [ref.] with an account for several of the staff.

All project Staff were provided with professional development in the use of an existing e-portfolio system known as Mahara however considered it not appropriate with a preference and flow on effect to the Streamfolio trial.

Georgina provided accounts of where Staff considered Streamfolio features would be very useful for people “outbush” with statements of limitation as to their access to personal computers thus limiting use of this rich media repository e-portfolio system.

Georgina Nou paints a positive futures picture of where POV might fit into the broader picture of education and training in an Australian context.

Georgina believes that the diversity of the use of POV will inform future discussions and that POV has great prospect in differing Government and non-government providers across the following areas:

- Environmental Health
- Flora and Fauna Conservation – Land Management
- Disabilities
- DFC training
- Health worker training
- Creation of resources in a more strategic way to work in with specific modules across the trades, Business, community service sector
- Creation of resources for life skills and literacy for use with Service SA - licensing, registration, family welfare communication.

Georgina has also consulted with TAFE SA librarians extending to community librarians in remote communities of NT with initiatives by some TAFE campus Librarians examining the context as to how POV technology can support the Lecturers in their respective colleges. Georgina is certain that there is potential to develop the role of librarians in the advocacy of POV technology for resource creation and learning/assessment support for lecturers, across all Vocational Education & Training (VET) areas.

The main concerns and observances that Georgina has for the use of POV in the broader social context include:

- When working with Australian Indigenous people it is paramount that the display of images and the context/extent of their use are clearly understood.
- Ownership of the videos created rests with communities with an explicit understanding to withdraw media from publication or view as cultural consideration to avoid compromise.
- Constant issue of an ever-expanding (pervasive) use of media often addressed solely by mainstream media with a pre-warning about persons deceased.
- Negotiations need to be done with each group that is worked with to ensure respect and that due protocol is adhered to.

Georgina has also given a great deal of thought to the ethical issues underpinning the use of these technologies that include:

- Guidelines for use
- Conceivable misappropriation of use of rich media creation
- Counter productive activities that erode the value of the main "promise" of the technology
- Inappropriate Internet disaggregation of recorded media

*"...There is great potential to use this type of technology to capture the 'voice', ideas and perspectives of remote indigenous people by Indigenous people, especially through the many remote media workers (with whom I'm working the Remote Media Festival 2009, 2010) to produce content for broadcasting and making available online through live streaming and recorded material."*

Georgina has also considered the opinion expressed by her colleagues about the issue with the quality of user-created videos within the context of POV and the wider creation of rich media resources both handheld and static.

*“...I like the express and relevant nature of them and believe that video creation and production will improve as more experienced multimedia savvy people become involved as Students and Lecturers. Outbush, there is a healthy network of media and broadcasting organisations, which are and have been developing the skills of indigenous people in these areas. There is a strong heritage to build on with local content being produced for NITC and ICTV since the 90s.”*

**Brian Mobbs**  
**Teacher, Refrigeration Section**  
**TAFE NSW**  
**Ultimo TAFE, Sydney Australia**

Brian Mobbs has been championing the use of point-of-view technologies for over two years in the Refrigeration trades area of TAFE NSW, Sydney Australia.

Within his role as Technology Mentor, an Institute initiative, he has also provided a real life and working context for the use of POV in learning and teaching contexts. Extension into how it is possible to aggregate and administer video creations within LMS Moodle courses, for the purpose of reinforcing key skill sets and theoretical concepts of practical skills are other focuses.

The Author has met Mobbs and his Colleagues on a number of occasions to hear and see these process considerations; demonstrations and implementation come to fruition. At all times the Author has been struck with the aptitude and carefully planned manner in which Mobb's takes the technology and renders it useful for purpose within this trades specific area of education.

The age groups that Mobbs is engaging with using these technologies range from students and learners under the age of 18 years right through to mature Lecturers who are between the ages of 24 years and 55 years of age.

*"...The main identifiable issue obstructing a wider and larger uptake within my organisation is a lack of knowledge to the existence of POV technology, and in what context it can be applied."*

Brian recounts that the above comment was no more evident than in his recent experiences where he exposed some of his colleagues to various point-of-view cameras as part of the SIT Technology mentoring program.

Once demonstrating the technology via various professional development sessions the group's behaviour was extremely enthusiastic and optimistic. In addition, after they viewed various videos created by other trade teachers, most of them were able to identify how they could utilise POV in their own respective areas of endeavour.

*"....The experience of introducing some of my fellow teachers to POV, and how positive their reaction was, highlighted how organisations could benefit from participating in research trials. A trial would potentially expose a great number of teachers and students to the benefits of POV for training and assessment."*

Brian states that a dedicated and comprehensive whole of organisation or even whole of Department trial of point-of-view technologies would also provide evidence of new outcomes pathways where students provide authentic evidence of their skills as it is applied in the workplace.

The main advantages of employing the use of POV technologies in learning and teaching according to Brian are that the technologies enable students to observe various hand skills,

which are accompanied by narrated instruction, from the exact point they are required to practice and master necessary psychomotor skills.

*“...I have found this projection (perspective) allows the students to better understand and process different sub-steps of trade hand skills.”*

Value added aspects of the technology Brian reports are that the technology appeals to the typical VET learner, which is considered to be both visual and hands-on.

Brian Mobbs draws upon McCarthy (1996) who describes such practical based learners as ‘the common sense learner’ and people who are ‘skills orientated...they like to experiment and tinker with ideas and things’ and have a desire to know how things work and how can they utilise it (p.95).

Brian believes that this is a fair summary of the students that he teaches and whom he learns from who have responded positively to the introduction of POV technologies beyond the confines of assessment.

Mobb’s personal experience has taught him that a majority of trade students feel they do not learn well from passively receiving verbal instruction, unless visual aids are incorporated - a notion supported by research conducted by Smith and Dalton (2005), who pointed out VET learners are more visual learners than verbal.

*“...The types of trades I see utilising this technology are numerous, and to make an attempt of projecting which trades would benefit most would be a mistake for anyone to predict. As all trades, from pastry cooks to jewellers and electricians require the use of hand skills, and the employment of POV technology has immense potential as an assessment and instructional tool.”*

Utilised as an assessment tool, Mobbs believe POV opens up a wide range of potential for workplace training and assessment within the VET sector. Mobbs has also given thought as to where point-of-view technologies have potential in the trade areas not limited to the development of instructional training videos only, but also for assessment.

Consideration is given to where students creating their own POV videos would be given the means to provide authentic valid evidence towards units of competency. Supplying such evidence is very appealing for rural students, time poor students and group trainers, where in some cases it may negate the need for students to attend their training organisations workshop and assessment sessions.

Real time assessment where the trainer can view students conducting assessment activities Mobbs predicts will eliminate the need for trainers to travel to workplaces. It would also remove a number of challenges facing workplace assessment, and the logistics of travelling around large cities or great distances to rural areas.

Mobbs is currently engaged in extensive trials of the technology across his specific trades area at Sydney Institute in the early stages of organising several students who will utilise the POV camera glasses for this purpose of workplace assessment.

**Paula Williams**  
**Faculty eLearning**  
**Coordinator Health Science**  
**Australian Catholic University**

Paula Williams has an extensive background in medical oriented education and training delivery with moves in the last 5 years to an e-learning strategic development role now with the Australian Catholic University.

Due to the reach of this organisation and the importance of the role as Co-ordinator of Health Science for ACU, Paula is often travelling between Sydney, Melbourne, Brisbane, Canberra and Ballarat in Australia.

Paula Williams has also been involved with many Australian Flexible Learning Framework projects and associated projects both in her role as an Educator historically with TAFE NSW and now in the role of Co-ordinator of Health Sciences at Australian Catholic University.

At the point of publication the user groups at ACU are predominantly in the 18 years to 24 year age group, with a moderate number between 24 – 55 years of age and a few users of POV technologies over the age of 55 years.

The use of POV by Paula's teams has predominantly been in a teaching, learning and administration context within Sports Sciences, Exercise Science, Paramedicine and Nursing.

*"...Some ACU academics in Exercise Sport & Science have indicated a potential use of creating 'competency content' at the end of each teaching semester using our purchased point-of-view POV headsets which have a micro bullet camera and detachable DVR."*

Further considerations have been given to recording assessment activities with POV and using the video file storage as a way to display the content for feedback and future case study for Project Based Learning (PBL).

*"....The use of POV to create multimedia rich resource development from the first person perspective could extend to recording golf putting, croquet and even boomerang throwing."*

Within the context of the ACU Exercise Physiology Unit, Dr Phillip Chapman and Dr Stephen Burke, Sydney are trialling this technology to see if it will be helpful with assessing students and improving their competency during lab testing.

As a component of their studies in a practical examination context each student has ten minutes allocated to answer some questions and demonstrate some basic lab skills.

Consideration is being give as to using this technology to devise some more innovative ways to assess students for competency, as there is an interesting anticipated future to potentially include use of Adobe Connect, a virtual web conferencing facility to record and transmit these activities over wireless access.



Last semester Academics at ACU according to Williams have utilized POV's in the student assessment in the unit Health, Fitness, & Performance areas of the Faculty. The concept of collecting assessment video will be used mainly for reflection and fine-tuning of process. Williams sees this consideration as ideally a metacognition "tool of learning how to learn".

The Australian Catholic University is also currently piloting the e-portfolio Desire2learn with consideration to also pilot future the use of the Streamfolio [ref.] video plugin with learners using POV in 2011-2012.

Williams lists the following use of POV technologies at ACU and the applied use of the technologies in each respective area of endeavour:

- School of Exercise Science - Health Fitness Instructors Assessment - Strathfield campus and Melbourne Campus they are trialling POV's to record a demonstration of how to use equipment in the laboratory such as the electromyography and force platforms.
- School of Paramedicine - POV for skills demonstration where students can demonstrate the application of skill acquisition eg. cannulation, airlifts (patients) in 'Rotary Winged Air Ambulance'- Ballarat Campus
- School of Nursing and Midwifery -Clinical practice (BP, TPR etc) for uploading to e-portfolio -Melbourne, North Sydney, Brisbane, Canberra and Ballarat Campuses
- School of Physiotherapy - Evidence based assessment task for first year students - using the POV for muscle testing and range of movement assessment- Brisbane Campus

**Ursula White**  
**Flexible Learning Project Officer**  
**Northern Territory Police, Fire and Emergency Services Training College**

In 2010 the Northern Territory Police, Fire and Emergency Services (NTPFES) is undertaking an Australian Flexible Learning Framework Innovation Project aiming to develop processes and tools to enable the use of Point of View (POV) cameras for Remote Assessment of learners.

The NTPFES has been exploring the use of POV equipment for the past few years and have used these technologies operationally for recording aspects of multi agency training exercises.

*“.....We foresee the potential of incorporating POV technology into the Training and Assessment fields for members and volunteers of the NTFPES.”*

The learners targeted for the project are volunteers for the NT Fire and Rescue Service (NTFRS) and NT Emergency Service (NTES).

The minimum age for volunteers is 18 and they comprise a broad spectrum of academic development, technology skills and experience levels from a wide variety of cultural backgrounds, including disadvantaged groups. These volunteers complete various accredited units and qualifications from the Australian Public Safety Training Package.

*“...Using POV cameras to undertake specifically designed assessment activities, the learners are able to provide evidence to their overall competency assessment and can use the tool for their own self development.”*

The project is trialling the Mobile Eyewear Recorder POV ‘ Camera Glasses’ and PDR50M POV Camera ‘Headset’. Group trials have occurred with 3 Volunteer Units in the Darwin Region, 2 from NTES and 1 with NTFRS.

*“...All the volunteers have been very enthusiastic and embraced the challenges that present themselves with gusto. They want to film as much as possible and are open to the potential of POV technology and are exploring how they can incorporate this technology into their training, assessment and operational exercises.”*

Through feedback, volunteers have reported that the equipment is light weight, compact – easy for travelling, easy to wear whilst leaving the hands free. On the downside, the glasses have been temperamental; no clear indication the camera is recording, no battery life indicator and come in limited range of wearable sizes.

These volunteers have been empowered by exploring new technology advances and have also gained a further appreciation on the operation, technical, training and assessment uses of POV cameras despite these challenges.

It is the intent of the project to foster receptivity with the trial group volunteers who will become the POV Power Users and champions within their Volunteer Unit.

White reports that initial review of the recorded footage has shown that mastering the art of POV operation and capturing the required footage does take practice, therefore, if used as an assessment tool, operation of POV cameras need training emphasis on the wearers line of sight, the POV equipment scope of view and body/head positioning of the wearer to capture the required footage.

The project assessment component of the Project will be occur over two weeks in late September 2010. Assessors from the NTES and NTFRS training facilities will be reviewing the recorded footage and assessing the learner against the relevant assessment criteria.

Project outputs for the learners include assets now developed by NTFPES as a “Learner Toolkit”:

- Point of View (POV) Evidence Collection guidelines incorporating instructions to Learner and Observer
- POV assessment activities
- Mobile Eyewear Recorder POV Glasses operation guide
- PDR50M POV Camera Headset operation guide

An Assessor Toolkit has also been developed and contains the Learner documentation with the addition of:

- Assessment Checklists for the Activities
- Introduction to an Online Community of Trainer and Assessor
- Instructions to access an online site with links to NTIS

White reports that in the event of future POV evidence collection within the NTPFES, further overarching RTO administrative compliance documentation would need to be developed such as:

- Request to undertake POV evidence collection
- Term and Conditions for equipment loan
- Tracking register of equipment

Possible challenges and issues that impact on of embedding POV observation into the NTPFES Training and Assessment Strategies include:

- Current low requirement for multi media evidence
- Learners with limited information technology skills and resources
- Retention of volunteers who have been trained in POV
- Remoteness of volunteer units and possible breakage, loss of equipment during transportation
- Formal POV training sessions delivered to Volunteer Units considering distance and timing constraints of Unit meetings, in-house training would be conducted
- NTPFES IT infrastructure and external volunteers unable to connect to the network

**Richard Ross**  
**Builder / Educator / POV Resource Developer**  
**TAFE NSW Western Institute**  
**Mudgee, NSW**  
**Australia**

Richard Ross has for a number of years shown an aptitude for employing technologies as part of his delivery pattern with students across a wide rural and regional footprint in NSW Australia.

Richard has also been actively trailing the use of video portfolios with students who have access to an online e-portfolio facility where they can upload POV video material for workplace assessment and accessing other peoples shared content.

In addition to his role as an Educator, Richard has been developing rich media resources, which use the concept of POV as part of the production of learning material for other teachers, innovatively resourcing from direct work as a Carpenter in the field.

Ross summarised POV video technologies as:

*"...POV's are great for getting the message across in a quick and concise manner, allowing the viewer to take in multiple forms of information at one time, thus enabling the educator to focus on the core subject matter and not have to dwell on details. With this in mind I have been developing a series of short trade based POV's that are able to be embedded into an LMS as core video material or developed to be part of a SCORM learning object etc. that could be and to be converted to a format compatible with mobile devices, for the student to view as many times as they need. POV's enable the student to gain the necessary underpinning knowledge for each particular competency, learning at their own pace."*

The application of these technologies Ross states is within an introductory context, however, there is also fast movement in developing resources that match Australian VET NTIS learning vocational training competencies. This would essentially position Ross's work to be considered as instrumental in the new applied areas of this type of technology in education alongside works by others such as McGrawhill in POV media accompaniment to training manuals.

Richard works predominantly with clients who are trade-based trainees, apprentices and whose age varies from late secondary through to mature age training.

Ross believes that POV technologies provide both the learner and the educator with a number of possibilities including access to relevant learning material:

*"...In essence "true-to-trade" examples that show expertise and intimate knowledge only gained from someone who has the skill."*

Ross considers on the challenging side of the equation that there is some risk in putting out resources representative of the educator's experience which might compromise intellectual property rights of the organisation that they are employed with.

Ross purports that inappropriate examples of POV based performance could reinforce bad practice that distils bad practice en masse.

Ross is keen to engage in projects that examine and apply the use POV video creation across a mobile learning environment where students and teachers are developing POV resources that are based on real life assessment.

Ross sees the acceptance of POV as a genuine learner performed methodology for achieving task in evidence driven assessment. Ross states that authenticity of the "wearer", storage and sharing of POV videos as presenting issue for large organisations with many enrolled learners.

**Ian Squire**  
**TAFE Teacher**  
**Illawarra Institute of TAFE**  
**Painting and Decorating**  
**Wollongong, NSW**  
**Australia**

Since 2009 Ian Squire, painting and Decorating teacher has been delivering Certificate III in Engineering - Production Systems to Industrial Painters and Abrasive Blasters in the south-east of NSW with an ever increasing reach into a whole of Australia delivery pattern.

The main work role for those in this trade area is to prepare various surfaces and apply different protective paint coatings to these surfaces using a variety of different application methods. Ever increasingly, technologies are playing a role in the application and procedures of achieving this work role.

As described by Squire, this described mode of Corrosion Protection is the primary method used in Australia in the Corrosion Prevention Industry. The CSIRO estimates that the cost of corrosion prevention in Australia is between 3 - 5 % of GDP. Prior to the development and delivery of this qualification there was very little training offered to this expanding workforce.

*“...As part of the practical assessment these workers who are enrolled in the Certificate III in Engineering - Production Systems qualification, TAFE NSW Illawarra Institute have been trialling the capture of their practical evidence using POV and other video capturing technology. We have also used the POV cameras to record video of practical demonstrations by teachers which in turn are embedded into Adobe Presenter presentations.”*

Squire reports that delivery of this course is occurring with students who work both on remote oil and mine sites rigs in various States and Territories. TAFE NSW Illawarra proposes to start to trial the use of an ePortfolio platform, which will be embedded into the organisations Moodle LMS for RPL students.

Consideration is to add live streaming to be embedded into the LMS as there is a perception that rich media creation will require a repository for student generated content above and beyond that of the teacher controlled resource space allocated in an existing LMS.

Squires considers TAFE NSW Illawarra institute as only entering the discussion with respect to POV, however, the Author notes that there has been some considerable explorations also within the context of this vocational training institute via the Teaching and Learning Innovations (TLI) unit championed by Manager, Vicki Marchant who also attended AUPOV09 in Wollongong Australia in 2009.

Squire reports that his project teams range in ages from 18 years through to over 55 years of age. The core issues, questions or challenges he is facing with the applied use of these POV technologies students is not having the necessary computer skills to use an e-portfolio or live streaming technology and also the internet access bandwidth restrictions in the remote regions of Australia.

*“...Time is a major factor in having an opportunity to explore these technologies as part of the e-learning pattern. Lots of trade skills are needed to service massive national projects involving resources sector.”*

Ian is involved with lots of interstate delivery using learning management system Moodle however at the point of this publication there was limited use of e-portfolios that might interface with POV technologies.

**Aaron Pont / Steve McMahon / Marg O'Connell**  
**Education Designers, Project Facilitators and Educators**  
**Centre for Education Excellence**  
**Canberra Institute of Technology**

Canberra Institute of Technology (CIT) has always shown a ready willingness as early adopters in many differing fields and POV is no different. Currently there are three main projects underway which are employing the use of POV technologies:

1. *Fyshwick Trade Skills Centre* - Interactive Whiteboards in the Workshop. Light Metals Fabrication teacher Steve McMahon has successfully integrated a Promethean Interactive Whiteboard, POV video camera and subject content online. The IWB is situated in the workshop and is mounted on a mobile trolley, allowing the device to be moved to any area of the workshop.
2. *Culinary (Cooking)* - David Burke, Teacher of Culinary has trialled the use of a variety of POV cameras as well as domestic video cameras both at CIT workshops as well as at a 'Bakers Delight' workplace setting.
3. *Animal Sciences (Distance Education Students)* - Brenda Donges, Education Manager of Veterinarian Sciences at CIT is using a POV video camera to assess a student in a remote location. Brenda is mailing the camera to the student who will capture video evidence for an assessment at the student's workplace. The student will then upload the video directly to their online course for the teacher to assess.

Pont, McMahon and O'Connell state that uptake for POV technologies at CIT has been isolated to various pockets of the Institute, but in terms of these areas the use of the POV technologies has been quickly normalised.

At Fyshwick Trades Skills Centre, for example, Steve McMahon provided students a demonstration of the POV cameras and how to use them. He also explained the reasons why they will be using the POV cameras in the workshop. The cameras were mainly used as part of their assessment processes and evidence gathering.

*"...Initial responses from students have been very positive and they were excited to be considered for trialling the cameras. They reported that they felt there was great value in being able to self-manage recording of their own work in the workshop. One student's comment was "how come we haven't had this technology until now?"*

These students were well versed in the use of mobile phones, domestic cameras and using the Internet in informal settings, so ICT literacy's were seen as reasonable or average, meaning that the technology was not considered to be a barrier in general terms.

The transition in using 'everyday technologies' to new and unknown technologies was considered not such a significant change for students or teachers. Again, reports are that there was no barrier to uptake or acceptance of these new technologies and these new technologies encountered little if no resistance by teachers or students. Pont, McMahon and O'Connell state the whole transition as being an intuitive process as far as students are concerned.



In terms of Recognition (recognised prior learning assessment) POV cameras have been useful in capturing students' evidence and storing it in such a way as to be meaningful. This leads to challenging the student to perform at higher levels, as their work is being captured and displayed to other students and teachers, setting the standards higher as determined by the students themselves. Students were observed themselves become mentors for other students in the use of and correct process for capturing successful content using wearable POV technologies.

The user age groups at CIT using POV technologies according to Pont, McMahon and O'Connell are in two main groups 18 years - 24 years particularly in Trades and Culinary as well as 24 years - 55 years - some evidence of Recognition within this age group more so.

Current issues, questions or challenges CIT is facing with the applied use of these technologies could include engaging the broader teaching community. However, indications show that where teachers are seeing these technologies are addressing a particular need, they are readily jumping on board.

CIT trials identified the need for teachers to have well designed programs to deliver resources using new technologies. Pont, McMahon and O'Connell consider it is imperative to avoid a 'disconnect' between the expectations and the outcomes to be achieved. Sound learning design they believe is an important factor in structuring the best use of the technology.

One issue Pont, McMahon and O'Connell have had to manage carefully is the potential exposure of business practices (in commercial settings) using the POV cameras. Pont, McMahon and O'Connell state that employers must be given clear expectations as to how the technology will be used to capture the student's activities in the workplace. Engaging the employer in the use of the technology means they are more likely to be supportive of its use in their context and any issues regarding intellectual property and commercial confidence can be positively managed.

*"....The many advancements and updates to the technology (i.e. POV cameras) means that there is a need to update equipment very regularly which can add pressure to budgets. However, with Institute commitment to the venture this can be managed over a longer period of time to ensure better returns on investment."*

The Interactive Whiteboard (IWB) demonstration scheduled to occur at MobilizeThis 2010 October 2010 hosted by Charles Darwin University will show how Canberra Institute of Technology (CIT) use an IWB, Learning Management System, POV technology, technical drawing software and integration with CNC cutting tools in a seamless and integrated fashion.

*"...This is a demonstration of using a mobile device integrated with other POV mobile devices used predominantly in a workshop environment. This (we believe) is the first time an IWB, POV devices and LMS have been made available to students and teachers within a workshop, on a mobile and interactive device."*

The focus according to Pont, McMahon and O'Connell is on providing teachers the opportunity to deliver content in a workshop and not a 'computer lab'. It also provides an opportunity for the students to interact with content and media using the IWB.

The extension to this is that students can collect evidence using POV devices with the Streamfolio [ref.] e-portfolio tool. Pont, McMahon and O'Connell also purport that at the very least, they can upload media to their course through the IWB.

The combination of using POV and the interactive white board states Pont, McMahon and O'Connell is best harnessed considering that with a mobile device, you don't have to have a wall to hang it on. The IWB can be wheeled to anywhere in the workshop as can the POV technology be easily used in combination with it. All that is required is a power point and a wireless connection (or wired network connection). They claim that there is very little if any PD required as the device/s and software are very intuitive.

Pont, McMahon and O'Connell believe that every teaching area can benefit from using an IWB, particularly in the workshop as it eliminates the need for ongoing 'computer lab' bookings. With good educational design, there is potential to eliminate the need for 'computer labs' altogether.

Trials with the Metals Fabrication course which will be demonstrated at *MobilizeThis 2010* will be a valuable example for other teaching areas with other examples of working with the CIT Centre for Health in using the IWB in a similar way in a simulated hospital ward.

In the near future CIT, according to Pont, McMahon and O'Connell are looking to set up wireless video POV glasses in a simulated, real time environment in the Health Faculty. This has potential to impact on the workplace not simply for the creation of learning activities but for the inherent work itself, even to change work practices they state.

**Simon Brown**  
**TAFE Teacher**  
**Trade Honours Program Mentor**  
**SkillsTech Australia**

Simon Brown and his stonemasonry team at Eagle Farm in Queensland Australia have developed an interest in reaching out to students using multi-media and the Internet as part of the larger organisational ICT strategy at SkillsTech Australia.

Brown states that:

*“...wearable mobile technologies have potential for many applications within my own teaching practice.”*

Brown is in the active process of exploring just a few with his learning and teaching responsibilities:

- For remote student learning and assessment;
- For evidence gathering and presentation in recognition of prior learning (RPL) candidates;
- For teacher training in design and delivery of training;
- For recording teacher competence to satisfy compliance with registration requirements.

Brown observes that the application of these technologies in SkillsTech is foundational or just beginning with his student age groups ranging in age between 18 years and 55 years.

Core issues, which influence the uptake of wearable mobile technologies in Brown's experience, include:

- Positive - cost and time saving
- Negative - technical barriers for teachers and students
- Negative - student access to computers and bandwidth
- Negative - infrastructure limitations
- Negative - unrealistic expectations by staff, employers and students

**Susan Brunner**  
**TAFESA - Elizabeth Campus Library**  
**Librarian & Lecturer (Women's Education)**  
**Adelaide, South Australia**

Susan Brunner and Library Technician Lisa Southon created their first POV video clip to attest to contributions to the Women's Education Program on the TAFE SA Elizabeth campus Adelaide Australia.

Southon now reports that this content will be used as part of a greater e-portfolio of testimonial content. Brunner states that this content can now be considered and used to demonstrate a "live evidence collection" in an effort to promote POV technologies camera glasses to other lecturers across Programs.

Southon considered it important to develop a visual instructional guide as part of that promotional distribution.

*"...As a Lecturer, I've used the POV camera glasses in my Fun with e-Technology class (Women's Ed). Students have taken the glasses off-campus to practice recording social events. They'll put that practice towards recording their competencies in skill areas for employment purposes."*

Brunner recalls that a Certificate 1 level Lecturer on the Elizabeth campuses used the POV camera glasses to record groups of students as part of class activities defined to include community home repairs.

*"...Those clips are part of their e-journals to demo their hand skills, their teamwork, their problem-solving, and their communication skills."*

Brunner states that the user age groups of these technologies in TAFE SA Elizabeth Campus students are aged 16 years through to 50 years of age.

Brunner provides a clear account of how TAFE SA is promoting the POV camera technologies to the studies programs on campus including;

- Video clips on YouTube which record technicians demonstrating how to's
- Virtual tours of the Library
- Emergency evacuation routes around the Campus
- Use of the 24/7 Library Moodle learning resource platform for videos

*"...As e-portfolios become more of a "push" in our TAFESA Institute, we anticipate additional students will borrow the glasses from the Library to record their skills."*

Brunner and Southon consider that POV provides students with easy application transition to their current studies, future employment, and recognition of prior learning.

Some of the challenges reported include the fact that POV videos tend to be very large files thus any repository (USB stick, Moodle) the student/lecturer uses must have plenty of space. Some of the other challenges and advantages of POV technology camera glasses as used in this context as experienced include;

- Trial-and-error to capture within-the-frame what you actually meant to capture
- Students may not know anything about editing
- Students almost always have a satisfactory product by their second attempt
- Easy to use technology - non-invasive thus people tend to forget it's there and they act more naturally than if a lens were pointed at them
- No microphone required - hands-free for ease of demonstrations.
- Glasses really have brought into the Library students who probably wouldn't borrow anything else

**Michael Coghlan**  
**E-learning Facilitator**  
**TAFE SA Adelaide North**  
**Australia**

Michael Coghlan first heard of point-of-view technologies in 2008 whilst watching a recorded POV video by Sean Alexander, Painting Teacher at MECAT TAFE NSW Western Institute Australia who was instructing students how to properly clean an oil based paintbrush.

Michael then inquired as to the perspective in the video, which lead to discovering the first simple form of point of view camera glasses which:

*“...I immediately purchased as I thought that they had a lot of potential of creating video of a differing kind...and one of the things that struck me first off was because of the trades being reluctant to engage with e-learning, here was a chance for them to engage using a tool they would love.”*

Coghlan considers the appeal of the POV to be that of the cheaper camera glasses because of an ease of use, however, he reports recording POV material requires a lot of practice to use these in the context of capturing anything of any quality for reproduction. Coghlan considers that POV technologies have a great deal of potential to create short videos that are instructionally oriented to showcase everyday skills and tasks such as how to connect household appliances and the language used to underpin that action or skill.

Coghlan was pleased that the Australian Flexible Learning Framework took up the initiative to fund small projects in 2007 starting with Peter Higgs in TAFE Tasmania, to investigate the educational potential of these technologies. This vindicated Michael's position on the potential use of the technology in an educational setting.

Michael is very aware now of trials occurring in his geographical jurisdiction using POV in hairdressing, automotive and hospitality. Coghlan states:

*“...The unique perspective of POV videos and that the fact that it seems to encourage a very natural style of delivery allows the subject of the video to not feel like they are at the centre of the video and yet their perspective is in actual fact the centre of the field of view.”*

Along the way the Flip video camera captured Michael's attention and given the early problems of POV attachments and wearable components, Coghlan reiterates that the ease of POV needs to be truly simple for future use and uptake across the education sector – plug-and-play with ease of action to have any advantage over technologies like the Flip.

Coghlan considers the narration of video as a natural part of the worn or wearable experience where the camera becomes part of the individual; whereas, in comparison to a handheld view that doesn't perspective invite the creator to naturally narrate their action.

Coghlan also attended the AUPOV 2009 conference in Wollongong, NSW Australia and was struck with what extremes people were taking this technology to ie. life blogging 24 hours a day.

Coghlan admits he was quite shocked by the Michael, K. & Michael, M.G.'s presentation regarding privacy and the ethical considerations for POV use and potential use. The predominant perspective Coghlan has on the pervasiveness of this technology is:

*“... It poses as an inevitable “happening”...that is, POV in education and training is both shocking and unbelievable to consider however, it is going to happen, it is now possible and it is constructively usable.”*

With reference to Carr, N. (2010) Michael posits that the behaviours of humanity are not a result of the Internet rather that humanity has a conscious action on itself. Parallels between this networked position with the POV discussion at large is according to Coghlan:

*“.....the path of least resistance that imbues the action of recording and that reflection needs educational consideration to better inform the use of POV constructively and to be mindful and conscious of the upsides and downsides of any technology including POV.”*

**Samantha Colliton**  
**Founder & Training Facilitator**  
**RemStone Therapy**  
**Orange NSW Australia**

Samantha Colliton established RemStone Therapy in 2008 after 7 years of developing the technique and training program for remedial massage therapists. RemStone Therapy is a postgraduate course for professional and experienced remedial massage therapists to upskill.

RemStone Therapy utilises heated basalt stones combined with unique techniques to be used as tools to offer a non-invasive deep tissue remedial massage. The Author and subsequent contact with the Australian Flexible Learning Framework introduced Colliton to POV technologies.

*“...Our aim is to teach in regional areas of Australia. As the modality is not a 9 to 5 career, access to online support and assessment content required some facility that was easy and practical.”*

Colliton states that the training program she has established is a competency based curriculum with students having the ability to physically demonstrate within the assessment process to reach certification. Within the RemStone Therapy learning management website students can access online video support material created by POV technology.

*“...Massage fundamentally is a hands-on modality so we required a tool that allowed us to video capture treatment from the perspective of the therapist and trainer.”*

The advantage of point-of-view technology states Colliton is that its user friendly, high definition, non-technically challenging resource creation that allows the student to provide assessment material and the trainer to create support-learning content.

One of the challenges Colliton has had to overcome is that within the remedial massage (as a tactile hands on) industry to encourage trainees to use this type of technology tool as part of the full RemStone therapist training program is ongoing. The ability to use and still maintain momentum, as Therapist, requires the technology to be simple, easy start up and easy to review instantly she states.

Colliton can see potential for an e-portfolio platform to store and share these POV assets amongst Trainers and Students, which would solve privacy, intellectual property and storage requirements and potential issues. This non-public sharing capacity is critical due to the nature of the industry where Client confidentiality is paramount and necessary to maintain trust with the Therapist in a professional capacity.

Colliton envisages a future where training in real-time across global geographical boundaries connects trainers with training groups in a distance mode of delivery enabled by POV technology and real time streaming.



**Val Evans**  
**Vocational Education & Training Consultant**  
**Val Evans Consulting**  
**Lake Cathie NSW Australia**

Val Evans is a VET Consultant working with a range of training organisations both private, government and community based. Evans has an extensive history and experience of delivering programmes for professional development, Project Management and Facilitation with over 26 years of experience in the Australian Vocational Education & Training sector.

Evans often describes herself as having:

*“...A unique blend of project management skills, a sound knowledge of professional development for organisational change and a true commitment to learning.”*

Val first encountered POV via the Australian Flexible Learning Framework and through projects and case studies of e-Learning Innovations projects. Evans was first struck by the idea of capturing things in the moment and could see an immediate use in an innovative way of capturing and sharing the learning.

Evans was not aware of the AUPOV event in 2009, however picked up on conversations across the VET sector and at conferences and saw some first-hand demonstrations in Sydney, also aware of communities of practice happening across Australia and globally online. Evans was enamoured with the concept and only needed to see a practical application and a project to engage with it.

*“...As with anything particular in the adult education sector it needs to be relevant and appropriate as this is a critical aspect of successful androgogy.”*

In 2010 a successful funding bid with the AFLF awarded Evans with an opportunity to project manage and facilitate, design and develop point-of-view technologies investigation as well as e-portfolios use in the context of online recognition of prior learning.

*MediSkills* aimed to build Business-Training Provider Partnerships between four Divisions of General Practice and four Community Colleges in the northern region of NSW, viz Tweed Valley, Coffs Coast, Port Macquarie and Tamworth Community Colleges. The project targeted administration staff working in medical practices that fall within each Division's geographic area.

*MediSkills* is essentially an online program that allows for the recognition of the skills and experience of these administration staff to help them obtain a nationally recognised qualification at Certificate III and/or Certificate IV levels. It includes an e-portfolio capability where participants are able to build a portable online portfolio of evidence that may include video and audio material as well as documentary evidence.

Point of View (POV) technologies including webcam, digital cameras and mobiles were used to 'capture the evidence as it happens'.

*"...Mediskills proved the ability to capture learning in the moment using a successful methodology that could be completed using state of the art contemporary technologies to realise teaching and learning".*

Evans recounts some of the challenges using POV technologies included issues with faulty equipment. This was outweighed however by the main advantages of capturing things in the moment from the participant's perspective, in a streamlined process of recognition which gives the trainer, the student / learner choice of access, time and space.

*"...The technology itself in this trial proved that good support material was enough to get students started and an opportunity to understand a context to use it within rather than a need of how to use it...the most important thing being an ability to share an experience in the moment."*

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## **Glossary Of Terms**

POV – point-of-view technology

Live Streaming – live synchronous broadcast across the internet

VET – Vocational Education & Training in Australia

AUPOV – POV Conference Event held by EDUPOV Pty Ltd in 2009

AFLF – Australian Flexible Learning Framework

Wearable – technologies that are generally (but not exclusively) considered to be body worn